



VDOO

ANALYSIS. ACTION. TRUST.

Connected Devices Cyber Security Strategy

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Presentation to Joint Legislative Emergency Management
Oversight Committee, Raleigh, North Carolina.

March 15th 2018

About VDOO

Backed by VCs and strategic individual investors

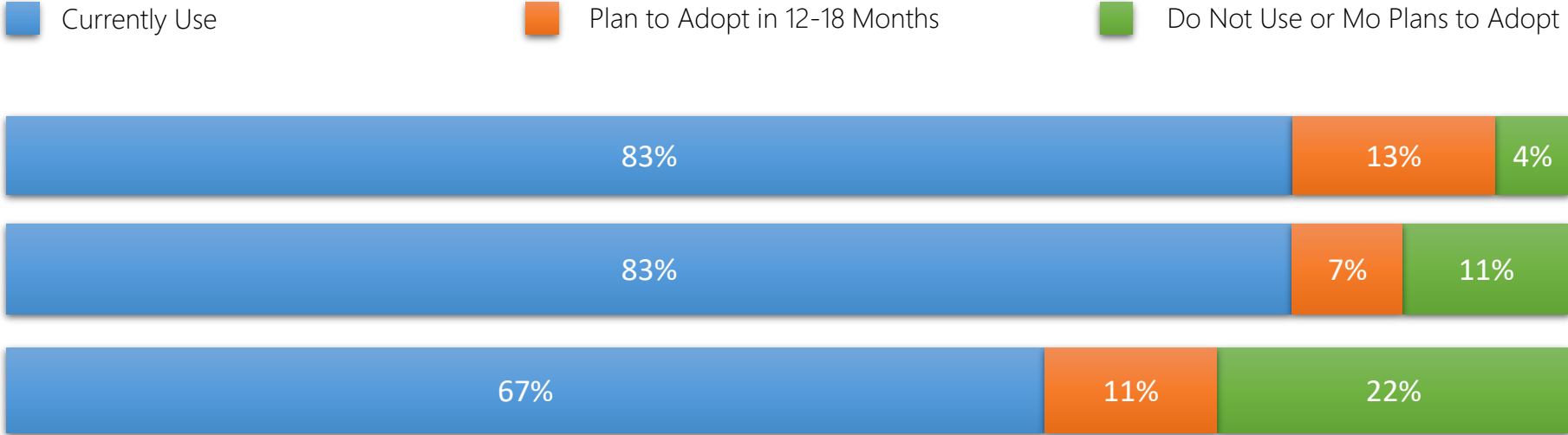
Deep expertise across cybersecurity domains with with the right mix of talent

- Founders of Cyvera, acquired by Palo Alto Networks, CA in 2014
- Top security researchers from both defense and industry

In beta with major IoT makers

Contributing data, methodology and code to standardization bodies and coders community

IoT Current Adoption and Excepted Growth Rate



* Organizational Adoption of Common IoT Use Case, by Gartner, CEB 2017 IoT security Survey

Breadth of IoT Cyber Attacks

What	When/Where	Impact	Environment
Amazon Key vulnerable to spoof attack keeping camera offline without user knowledge	U.S., Nov 2017	Emotional on customers, reputational for business, can lead to burglary	Business / Home
Reaper uses known security flaws in the code. Infected one million networks used for DDoS	U.S., Oct 2017	Emotional for users, reputational for vendor	Home
Persirai targeted more than 1,000 IP camera models, totaling 120,000 IP cameras	Globally, May 2017	Emotional for users, reputational for vendor, financial for businesses, DDoS on others	Business / Home
Hajime Turned 300,000 IoT devices to bots. Possibly a White Hat. It's built on a P2P network	Globally, April 2017	Emotional for users, reputational for vendor, financial for businesses, Possibly a Whit Hat	Home
Teledidonics collected sensitive user information from IoT adult toys	U.S., Mar 2017	Emotional for users, reputational for vendor, Privacy infringement lawsuit settled	Home
Mirai utilizes millions of IoT devices to execute DDoS on Dyn and other web services	Globally, Aug 2016 - Mar 2017	Emotional for users, reputational for vendor, Privacy infringement lawsuit settled	Home
CloudPets exposed 2.2 million voice recordings and account info of 800000 kids	Globally, Feb 2017	Emotional for users, reputational for vendor, barrier for IoT growth from adoption perspective	Home
Romantik Seehotel Jaegerwirt hotel guests rooms' doors lockage until pay	Austria, Jan 2017	Emotional on customers, reputational for business, IoT growth barrier (back to traditional locks)	Business
Foscam baby camera has been hacked and used to scare terrified baby	U.S., Nov 2016	Emotional, vendor reputation damaged due to buzz in parents' blogs	Home
Samsung SmartThing Severe vulnerability (enables to open locks, turn on fire alarm, etc)	Globally, May 2016	Reputational for vendor, barrier for IoT growth from adoption perspective	Home
Vtech devices breached, exposing data of 6.4 million children	Globally, Dec 2015	Emotional for users, reputational for vendor, barrier for IoT growth from adoption perspective	Home

IoT security inherent tension

IoT Makers' Focus

Time to market

Cost

Functionality

Cyber-Crime Business Model (ROI)

Cost per single attack

Replication opportunities

Attack impact

Insufficient Solutions

Internal security team

3rd party pen-testing

Regulators & industry best practice

IoT Hacking Scenarios | Predicted Tomorrow (12-24 m)

Schools & Universities

Hospitals

Businesses



Threat Landscape

Privacy Violation

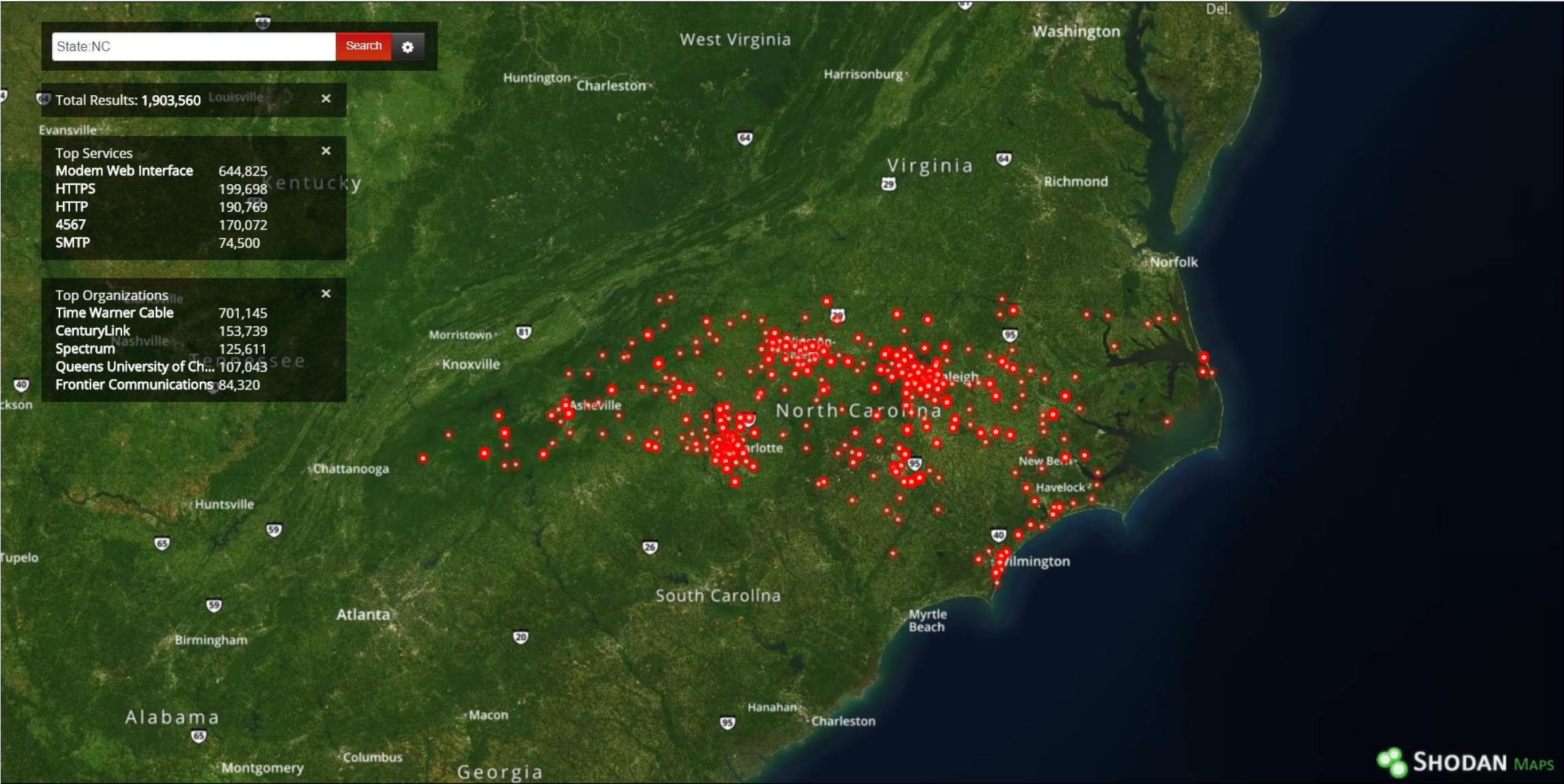
Intelligence Gathering Toward A Physical Attack

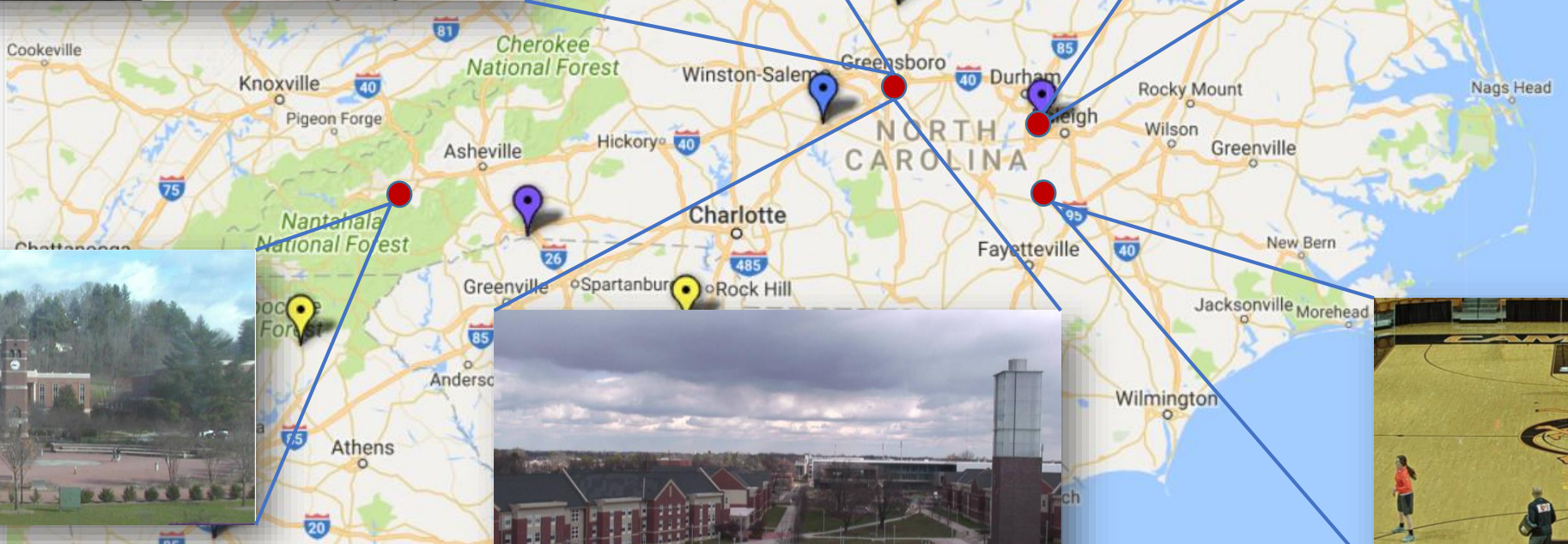
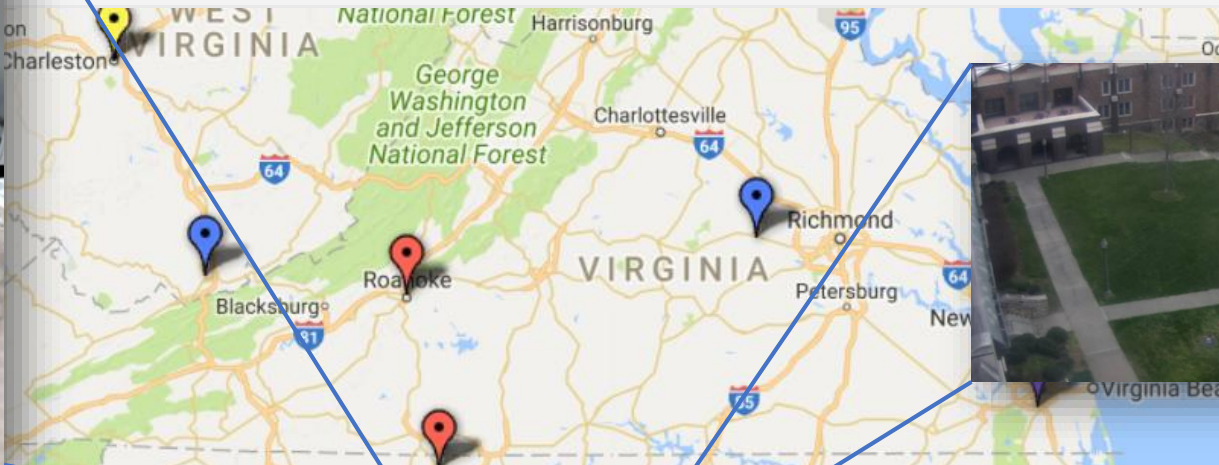
Combined Physical and Cyber Attack On A Single Target

Multiple-Target Attack

The K-12 Cyber Incident Map 312 Incidents Since January 2016







152.3.74.20



AXIS P1346 Network Camera

[Live View](#) | [Setup](#) | [Help](#)



City	Durham
Country	United States
Organization	Duke University
ISP	Duke University
Last Update	2018-03-01T13:25:33.033285
ASN	AS13371





152.38.11.66

AXIS COMMUNICATIONS **AXIS P1364 Network Camera** [Live View](#) | [Setup](#) | [Help](#)

View size: Stream profile: WDR:

City	Buies Creek
Country	United States
Organization	Campbell University
ISP	North Carolina Research and Education Network
Last Update	2018-03-08T04:42:33.123131
ASN	AS81



152.30.218.200

City	Cullowhee
Country	United States
Organization	Western Carolina University
ISP	North Carolina Research and Education Network
Last Update	2018-03-07T23:23:22.736110
ASN	AS81

🌐 152.8.50.40

[View Raw Data](#)

City	Greensboro
Country	United States
Organization	North Carolina A&T State University
ISP	North Carolina Research and Education Network
Last Update	2018-03-05T07:19:38.887341
ASN	AS81



AXIS Q1755 Network Camera

Live View | Setup | Help

View size:

Stream profile: Motion JPEG

Video stream or PTZ preset: ----- Go



Up

Down


TILT


Video PTZ

PAN Left Right

ZOOM Wide Tele

FOCUS Near Far



 Giving our best when it means the most.
 

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98.101.108.195





Security Authority (SA) for Connected Device Certification Device Focused, Automated, Scalable, Balanced, Solution.

VDOO's mission:

- Help IoT Regulators build their right IoT security strategy and standards, and enforce them through existing technologies
- Help IoT makers own security at the development stage, and enable post-deployment security
- Provide IoT operators visibility and security of their existing devices and tool to support responsible and informed buying decisions



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Thank you.

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